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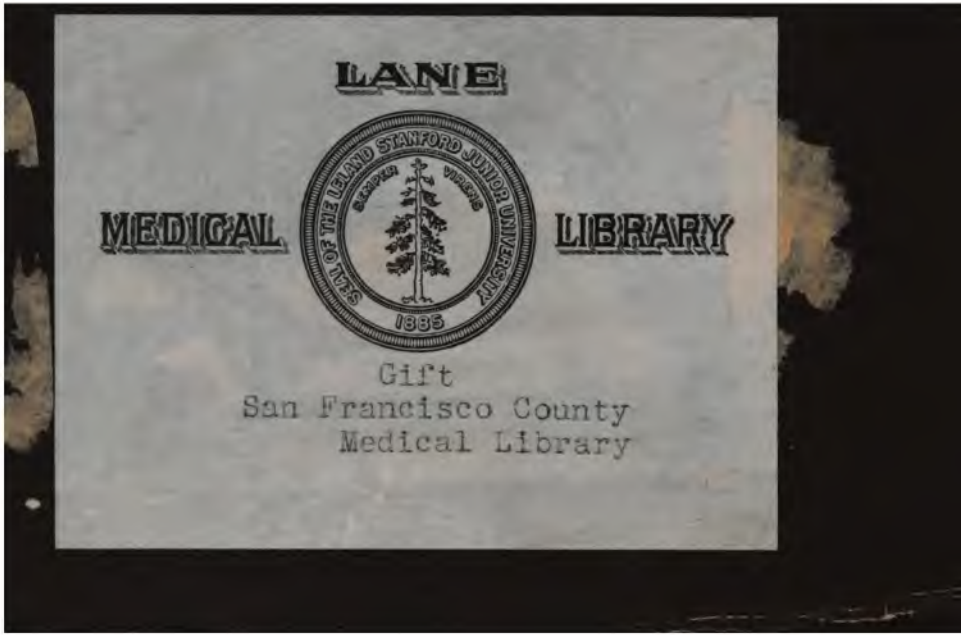
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APHORISMS IN FRACTURE

BY

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PREFACE.

The greater portion of the following Aphorisms were originally read before the Central Kentucky Medical Society at its meeting in Harrodsburg in 1877. Subsequently they were published in the Louisville Medical News. They met with considerable favor, having been copied by a number of medical journals, and were especially honored by the criticisms of several distinguished authorities in surgery. Some changes have been made in the present edition as a result of these criticisms, and with a thorough revision of the old matter fifty-four new Aphorisms have been added. It will be found now that pretty nearly the entire field of fractures is covered in these few pages.

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APHORISMS IN FRACTURE.

INTRODUCTORY.

Fractures form perhaps the widest chapter of importance in surgery, and the experience gathered concerning them is correspondingly great. There are few members of the profession who have not treated a number of broken bones. And yet with all these opportunities for observation a singular difference of opinion exists on fundamental points. The question of extension and counter-extension is a vexed one. Mr. Flower, in his article in Holmes, describes a "crutch-splint" with which to exert these forces in fracture of the arm, while on the other hand the necessity for such measures is denied by a large body of surgeons even in fracture of the thigh. Men are divided upon the simple question of when to dress a fracture; upon what should apparently have long since

been positive knowledge—the prognosis in this injury; and what has been written concerning the methods of dressing fracture would take many volumes to record. We have all felt the disadvantage of this, especially in the early days of our practice—how our memory has been taxed with the multiplicity of apparatus, losing sight, in the midst of so much paraphernalia, of the fact that the principle of treating every fracture is the same. It will be a grand day for surgery when the lumber-room which contains its fracture-boxes and splints of various designs is destroyed. The simple necessities of our art could easily be restored.

In the following Aphorisms it has been as much the aim of the author to ignore useless matter as to indicate that which is valuable. What is stated is upon the basis of no little clinical experience, obtained with all the anxiety incidental to fracture practice. He has tried to answer as briefly and as positively as he could such questions as were continually rising in his own mind and what must have occurred to others going along the same way. If the answers are

not as satisfactory to every one as they are to himself, he believes he has done service in indicating points where disagreement may arise.

The doctrines enunciated are chiefly those of Mr. Erichsen, upon which the schools of Louisville are well agreed. "Simplicity with efficiency" is the motto of these teachings. Methods which may be pursued by the roadside with results as excellent as those obtained through hospital machinery are certainly to be desired; and such, at any rate, are the claims of the plastic apparatus; and so, too, Persuasion, not Force—the theory which underlies this practice—has acted admirably in many affairs in life, and is certainly a comfortable doctrine to hold in the treatment of rebellious muscles.

GENERAL APHORISMS.

1. Fracture is the term applied to the breaking of bone or cartilage.

2. The cause of fracture is external violence, direct or indirect. Exceptionally it may occur from muscular contraction.

3. Clinically the important division of

fracture is into *open* and *subcutaneous* and into *transverse* and *oblique*.

4. The signs of fracture are pain, swelling, loss of function, deformity, mobility, and crepitus.

DIAGNOSIS.

5. Pain and loss of function are symptoms which may accompany any injury. They are of special importance in establishing the existence of impacted fracture, fractures of the outer third of the clavicle, intra-capsular fracture of the femoral neck, and fracture of the fibula.

6. In establishing diagnosis swelling is the least important of the symptoms accompanying fracture, as it is among the most important in treatment. It does not necessarily occur, and when present obscures signs which are pathognomonic.

7. Deformity frequently indicates at once the presence of fracture, and when present is particularly valuable in doing away with the necessity of painful and injurious methods of diagnosis. This is especially true in intra-capsular fracture of the femoral neck.

8. Mobility is absent in impacted fracture and green-stick fractures, and is obscured in Colles' fracture, fracture of outer third of clavicle, of the fibula, and all fractures near the joints.

9. In establishing the diagnosis of fracture crepitus is the most satisfactory sign; nevertheless it is not always necessary or desirable to obtain it. It may not be had in impacted fracture, except to the injury of the patient. It is difficult to obtain in intra-capsular fracture of the femoral neck, fracture of outer third of clavicle, and of fibula.

10. The sensation of crepitus in recent fracture is *sui generis* and unmistakable. When once detected, further attempts to elicit it should not be made.

11. A great difficulty in the differentiation of fracture is from sprain, as well as from dislocation, which latter is apt to have its own positive signs.

12. Whenever any doubt exists as to the diagnosis of fracture the examination should be conducted under an anesthetic.

13. In making diagnosis of fracture, and especially in determining if proper reduc-

tion has been effected, it is all-important that comparison should be made between the injured and uninjured limbs.

14. The direction of simple fracture may sometimes be made out in subcutaneous bones by manipulation; but when it is at all deep-seated, as in the thigh, it is to be determined more by general than local signs. Practically that fracture is transverse where the abutment is sufficient to prevent return of shortening after reduction has been effected.

15. In handling a fractured limb it should be grasped firmly. By so doing muscular spasm is best controlled. The seemingly-gentle way of lifting upon the hand is far more painful to the patient.

16. Frequently in fracture cases more damage is done in the conveyance of the patient than by the original injury. Simple fracture may thereby be made compound; and in compound fracture life may drip away from a wound which is thought not to be bleeding. It will add greatly to the comfort of the patient if those who carry him will keep step.

PROGNOSIS.

17. The prognosis in simple fracture is always favorable when the injury is confined to the shaft of the bone, even if there be comminution of the bone.

18. In multiple fracture, when simple, the healing process is not retarded.

19. In fracture involving a joint more or less stiffness is to be expected.

20. The probabilities are that less damage is done in fracture from indirect than from direct violence.

21. Fractures do best in the young—in celerity, in certainty, and perfectness of cure. All things are here possible with youth.

22. Old age is not a bar to the union of bone where the fracture is through the shaft.

23. In all fractures with separation of fragments—acromion, humeral tuberosity, olecranon, patella, and femoral condyle — the prognosis for perfect cure is not good.

24. With the improved methods of treatment the danger to life and limb in compound fracture has been reduced to such an extent that former laws for determining the question of amputation are to be recast.

25. The elbow and hip are the bugbears of fractural surgery.

26. Under the best-devised treatment of fracture conscientiously carried out bad results may follow, and he who is swift to condemn a fellow practitioner for such is wanting as much in knowledge of his art as in charity.

TREATMENT.

27. The best time to dress a fracture is immediately after its occurrence.

28. Temporary dressings are only to be used when the materials for permanent dressings are not to be obtained, or for the purpose of moving the patient.

29. Under proper treatment immediately instituted swelling will probably be prevented, and if swelling be present it is best treated by proper fracture dressings.

30. The indications for treatment of fractures are, first, reduction of the fragments of bone; second, their immobilization.

31. The reduction of fracture is to be done without violence. The muscles being relaxed, a gentle, steady pull is all that is necessary in fracture of the shaft. In fract-

ures near the wrist the fragments are to be unlocked.

32. While the deformity following fracture is chiefly due to the action of muscles, it is also greatly due to this, that the shape of the limb is restored. In reduction of fracture we unlock the fragments and bring down the lower one to a position where the coördination of the muscles lands it in its proper place.

33. In simultaneous dislocation and fracture the rule is to reduce the dislocation first. This is easier to recommend than to do, however, if fracture is near dislocated joint.

34. The dressing of all fractures is best done under an anesthetic, which not only secures comfort to the patient, but by its influence over muscular spasm gives the best chance for perfect reposition of fragments.

35. The fractured limb should be dressed in the position of ease—rectangular for the forearm and general fractures of the elbow; in the lower extremity, with the knee slightly flexed. In fracture of olecranon the arm should be as much flexed as possible not to separate the fragments.

36. Perfect immobilization is only to be

obtained when the joints contiguous to the fracture are secured; and in fractures of the lower extremity there is no law more important than this.

37. One of the commonest reasons for failure and disaster in the treatment of fracture arises from the fact that bone and muscle only are considered, and blood-vessels and nerves are left out of sight.

38. Carved and manufactured splints generally fit nobody, and are to be rejected as not only expensive but damaging. Deal-board, pasteboard, and the materials for the plastic apparatus form all the appliances needed by the surgeon.

39. Bandages are made of cotton stuff or cheap flannel (preferable for the cotton in it) with the selvage edge torn off, and thoroughly shrunk before use.

40. Plastic material consists of cotton batting, oakum, bandages, plaster of paris, eggs and flour, starch, liquid glass, etc.

41. The application of the roller bandage immediately to the skin, whether as a protective or to prevent muscular spasm, has resulted in such disaster that it is one of the

curiosities of surgery how it could be repeated at this day. When cotton is placed *over* such a bandage it forms an absurdity scarcely credible in a man of ordinary sense.

42. Evenness of pressure is only to be obtained by the proper lining of the splints or retaining-apparatus with cotton, or in the case of compound fracture with oakum. The method of padding splints or protecting limbs with folded lint, blanket, etc. is not only vastly inferior, but generally results in discomfort to the patient, from the close packing of the material.

43. The cotton to be used is preferably that known as "batting." "Wadding" is inferior. It is of prime importance to use the best batting whenever this can be obtained. This is smooth, easily separated into layers, and free from foreign substances, which produce inequalities and irritation. The layers should be unbroken. It is next to impossible to make an even dressing with the broken bits which the housewife so often offers to the surgeon. It should be freely used, especially over bony prominences. A fracture in the thigh of or-

dinary dimensions will generally require a "pound roll." It is to be smoothly and evenly applied. For convenience it may be held *in situ* while the rest of the dressing is applied by ordinary sewing-thread which does not constrict.

44. Continued extension and counter-extension are as a rule not necessary to prevent shortening in fractures. This is best done by removing the causes which lead to muscular spasm: first, by early and as a complete reposition of the fragments as possible; second, by the smooth application of cotton batting to the limb; third, by the equal pressure of a bandage extending from the distal end of the limb to a point beyond the joint above the fracture; fourth, by the accurate fitting of the splints or plastic material for support; fifth, by as little interference afterward as possible.

45. Angular deformity is best overcome by the same measures as are used in longitudinal deformity. Compresses are to be avoided as insufficient and unsurgical.

46. Comfort is the sign that a fracture has been properly dressed. A certain amount of

soreness may be left after any fracture, and with some temperaments pain may be present even when the fracture is properly dressed; but the general law is that pain should speedily subside when the dressings are right.

47. Wherever it is possible, after the dressing of a fracture, it should be seen again in a few hours, and the case should receive daily attention in its earlier stages.

48. Frequent dressings of fractures for the purpose of examination are not only useless but hurtful.

49. While meddlesome interference with the dressing of fracture is to be strenuously decried and great reliance is to be placed upon general signs, as comfort, absence of fever, etc., and upon the condition of fingers or toes, nevertheless it is prudent under several circumstances to make inspection of the limb with comparative frequency. This precaution refers especially to fractures in the aged, to compound fracture, and to fracture accompanied by deep bruise, though the skin may be unbroken. Under such circumstances sloughs may be produced with-

out warning and by the weight of the limb independent of any pressure of the bandage.

50. A common reason why accidents in the treatment of fracture go undetected is that inspection is limited to the front of the limb.

51. The surgeon is to regard not only the welfare of his patient, but his own reputation. To this end he ought to give fair warning as to possible ill results. As suits for malpractice have arisen oftener from fracture cases than any other kind, it will be remembered there is one thing which the law is slow to excuse—neglect.

52. If there be a consultation between two physicians in a fracture case, and a difference of opinion in regard to treatment arise, one should yield. Compromises in cases of this kind are apt to result badly, while fractures may do well under almost any reputable method properly pursued.

53. If in a case of fracture a consultation is called of a surgeon by one who does not make special pretensions to the art, he should resign to him the conduct of the case, as on him will rest the responsibility of the outcome. In other words, he who "sets" the

fracture, not he who watches it, is charged with the result.

54. Whenever a fracture occurs every physician in the community within reach is usually summoned. The doctor should therefore be ready to treat such cases not only for the comfort of the patient, but for his own profit.

55. The consolidation of fracture being a gradual process, the exact date of its occurrence is not to be fixed without continued experiment, which would be disastrous to the patient.

56. The date upon which retentive apparatus may be laid aside varies with (1) the age of the patient, (2) the nature, and (3) situation of the fracture.

In simple fractures of the adult: For the lower extremity, eight weeks; for the upper extremity, six weeks.

During second decade of life: For the lower extremity, seven weeks; for the upper extremity, five weeks:

From five to ten years: For the lower extremity, six weeks; for the upper extremity, four weeks.

Under five years: For lower extremity, five weeks; for upper extremity, three weeks.

Fractures near the joint should be turned loose in the adult a week earlier; other ages in proportion. In compound fracture, if the wound heal readily, the date may be taken from this event as in simple fracture. If not, retentive apparatus is generally worn from twenty-five to fifty per cent longer after compound than after simple fracture. In all cases the natural timidity of the patient may be depended upon to restrain undue action for a number of days after apparatus is laid aside.

57. It sometimes happens that from excess of timidity the patient refuses to use the limb long after the period for proper union has gone by, giving rise to suspicion of ununited fracture. The remedy is enforced exercise in proper gradation.

58. In all cases of anchylosis occurring after fracture where the joint is not directly involved—and in many where it is involved—the best method of treatment is by gentle measures—by tiring the muscles rather than by forcing them.

59. Rubbing with whisky and water is the best remedy for the itching which comes after (and before) apparatus is removed.

60. It is generally best to leave the flesh-wound of compound fracture unsealed. If small and clean-cut it will perhaps speedily close itself; if large and lacerated it will require the best drainage it can get. Nothing but disaster can follow the closing of a deep, lacerated wound accompanying fracture.

61. Not every fever which follows injury is surgical fever. Frequently in malarial districts after fracture there rises a fever of well-marked intermittent type thoroughly controllable by quinine.

62. In an ordinary compound fracture it is not necessary, as a general thing, to cut a trap in the apparatus under a week or a fortnight. The thermometer in the axilla with appearance and sensation of patient are generally good indices of state of wound.

63. Green-stick fracture, when the bend is excessive, should be straightened even at the risk of completing the fracture, which occurrence is not a matter of much conse-

quence. When the bend is slight the bone will assume its proper shape by natural processes.

64. In the treatment of ununited fracture the simplest measures will often suffice. Retentive apparatus having been properly applied, fresh air and food, with specific remedies in special diathesis, will generally do the rest. When local irritation is necessary the order of trial should be (1) rubbing ends of bone together; (2) subcutaneous scoring with tenotome; (3) drilling; (4) the seton; (5) pegs; (6) subcutaneous resection.

65. As all the dressings of fracture can be applied on the model, the young practitioner has ample opportunity to make himself an adept in their application, without waiting for clinical experience.

66. In view of the vast responsibility accompanying the treatment of fracture the surgeon should demand for his services a fee commensurate with the ability of his patient to pay, and also in adjusting the fee for fracture it should be done upon the basis of skill rather than labor.

FRACTURES OF THE FOREARM.

67. In fracture of forearm the order of frequency is: 1. Lower third of radius; 2. Both bones; 3. Ulna; 4. Radius, upper third.

68. There is but one mode of dressing necessary for all fractures of the forearm, whether these be of one bone or of both, and whatever be their situation.

Method of Dressing. The pieces for dressing a fractured forearm consist, first, of cotton batting; second, of light wooden splints; third, of bandages. The splints should extend from the elbow to the tips of the fingers. They should be a trifle wider than the wrist, to prevent lateral pressure upon the bones and the obliteration of the interosseous space. They should not be much wider, else lateral displacement may occur. For convenience they may be shaped to the arm and hand. It will always be found more convenient to envelop the arm with the cotton instead of padding the splints with the same; and where splints are padded with the cotton it is always better to fasten this material by a few turns of ordinary sewing-thread. The method of padding splints by securing the cotton with bandages interferes greatly with their plasticity and comfort.

The bones having been put in apposition by gentle extension, and the splints secured to the palmar and

dorsal aspect of the arm by proper bandaging from tips of fingers to elbow, the arm is to be placed in a sling, with thumb pointing upward, in which position the bones are half way between supination and pronation, and the interosseous space is well preserved.

The dressing, when fitted for fracture of the forearm, is not to be removed, if comfort declares that it is properly doing its work, for a week or ten days, when the splints are to be shortened, so that they shall not reach beyond the roots of the fingers; and these are to be exercised frequently to prevent stiffness.

69. The Pistol splint does nothing toward preserving the interosseous space; and the interosseous pad, formerly considered necessary for this purpose, is very nearly obsolete, and should be entirely so.

70. In the treatment of fractures of the lower end of the radius reduction is every thing. Pilcher's method of first strongly bending the hand backward on the forearm, making extension while in this position, and then bringing it forward into flexion while the extension is kept up, acts admirably, the fragments unlocking and the deformity disappearing as if by magic. It is the opinion of Dr. Pilcher that in most cases no reten-

tive apparatus beyond a bandage and a sling is required, confinement in splints favoring stiffness. It would seem, however, that after severe injury the support of these would be required to prevent soreness.

71. The complicated dressings for Colles' fracture of the radius are not called for, and such dressings as include a compress to correct deformity are to be condemned as unsurgical, not only at the wrist but elsewhere.

72. In Colles' fracture, after union has taken place, there may remain some of its characteristic deformity. In the young this generally disappears under the play of the muscles, or sometimes in a bone recently united it may be remedied by actual compression.

73. A common result following Colles' fracture, and in fractures near the wrist in adults, more especially in the aged, is a severe and persistent neuralgia. Which is best treated by the hot-water douche.

74. In fracture of both bones of the forearm, and frequently after fracture of one bone, there is after union a bowing of the forearm always toward the ulnar side. Some-

times this is chiefly apparent, often real. It will frequently disappear, even when excessive, under the play of the muscles, especially in the young. But healing is never so perfect that the site of the injury can not be detected by manipulation.

75. Stiffness of the tendons and of the wrist-joint are not confined to Colles' fracture, but may occur with other fractures of the arm. Massage and passive motion will generally effect relief.

76. Many physicians do not have clear ideas concerning the fit of a sling. It should be wide enough to reach from the elbow to the tips of the fingers and worn with the straight side to the hand and the angle to the elbow.

FRACTURE OF FINGERS.

77. In fracture of the fingers or any portion of the hand the retentive apparatus should include the forearm.

78. In compound fracture of the fingers, the result of crush, the principal question is in regard to amputation. In connection with this the following points are to be considered: First, The recuperative powers of the

hand are peculiarly great, and it is possible for a severe wound to heal. Second, After the wound has healed there is great danger that the fingers may be useless from stiff joint. Third, It is better to err on the side of conservatism, as even when the healing results in useless fingers the proper point for amputation can then be best determined; and besides, the vast majority of people prefer stiff fingers to none at all.

FRACTURES NEAR THE ELBOW.

79. Every injury, save fractured olecranon, near the elbow-joint, whether it be fracture or dislocation, should be dressed with rectangular splints.

Method of Dressing. The rectangular splints for the elbow are best made from pasteboard. The limb from the fingers to the shoulder is to be enveloped in cotton; the splints, moistened in water, are to be applied laterally, molded and confined with bandage from *hand to shoulder.*

Rectangular splints are called for in injuries near the elbow, as effecting in the best manner immobilization; and, secondly, should anchylosis result from the injury they preserve the arm in the best possible shape for its future usefulness.

80. More or less stiffness of the elbow is to be expected in every fracture occurring near this joint. If the fracture be through either condyle such result can scarcely be avoided, as passive motion in such cases, when early instituted, tends to prevent union. Where the bone is broken above the condyles stiffness can frequently be prevented.

81. It is probable that passive motion when instituted while the healing process is going on does more damage than good. The best measures against anchylosis are perfect reposition and rest.

82. Where decided stiffness has persisted for some time after the union of fracture near the elbow, much can be done for its relief by passive motion and massage faithfully pursued.

83. In fracture of the olecranon where there is no separation of the fragment, owing to the fact that the fibrous expansion of the triceps is unbroken, the arm may be dressed in an angular position. In fracture with separation of the fragments it is necessary for their apposition that the arm be dressed in

an almost straight position, but the earliest possible moment should be seized to bring the arm back to an angular position, that anchylosis may not occur with the arm straight and its usefulness in so far destroyed.

FRACTURES OF HUMERUS.

84. Fractures of the humerus in the lower half are best treated by rectangular splints, as in fractures of the elbow. Fractures of the upper end require shoulder-cap, the spica, etc.

Method of Dressing Fractures in Upper End of Humerus. Fractures of the upper end of the humerus, including fractures of the shaft, surgical and anatomical neck, are dressed, first, by enveloping the limb from hand to shoulder with cotton; second, by bandaging from the hand to upper arm; third, by fitting cap to shoulder, and over this carrying the spica bandage. The body of the patient acts as the inside splint, the hollow being filled with a folded towel, and the arm is secured to the side by additional turns of the bandage, the forearm supported in sling.

These fractures may be also dressed with plaster-of-paris apparatus. After four or five weeks splints may be laid aside and retention trusted to spica bandage alone.

85. Stiff joint at the shoulder is not liable to occur in extra capsular fracture.

FRACTURES OF CLAVICLE.

86. Two methods of dressing a fractured clavicle are worthy of chief consideration. These are, first, for temporary purposes, an ordinary sling, lifting the forearm across the breast to an angle in which it is comfortable, with a band passing around the body, confining the arm closely to the side. For a permanent dressing Sayre's method, by adhesive strips, is the most convenient and efficient, save in very warm weather, when the plaster "runs."

87. Whenever the clavicle is broken at its great convexity, and shows the characteristic deformity, perfect apposition is difficult to effect, or to maintain, and deformity will remain to a greater or less degree after union has taken place. It is more likely to be prevented by keeping the patient in a recumbent posture, or by using means to fix the scapula.

88. Fractures of the outer third of the clavicle are frequently overlooked by physi-

cians, the injury being mistaken for a sprain. Displacement is not liable to occur in this situation, and crepitus is difficult to elicit. Wherever, after a fall or other injury, sharp pain is developed by pressure upon the outer third of the clavicle, fracture at this point is to be suspected.

89. The axillary pad in Fox's apparatus can not be worn with comfort, and is of very doubtful utility.

FRACTURES OF THE RIBS.

90. In fractures of the ribs the jack-towel, or better, the roller, is our chief reliance. Adhesive strips or collodion and gauze, over and around the seat of fracture, are generally not practicable, and not always sufficient to conquer pain, which is the one thing we are to attack.

FRACTURES OF THE JAW.

91. In fractures of the jaw our chief reliance is in Barton's, Gibson's, or the four-tail bandage, and soft food. Internal apparatus (inter-dental splints or tying the teeth together) practically amounts to little.

FRACTURES OF THE NOSE.

92. In fractures of the nose the main thing is early reposition of the fragments. Apparatus to keep the bones in place afterward are principally theoretical.

FRACTURES OF THE PELVIS.

93. In fractures of the pelvis our chief reliance is in relaxation of the abdominal muscles, and control of these from spasm, from cough, etc. This is best done by the inclined plane, jack towel, broad bandage, and anodynes.

FRACTURES OF THE LOWER EXTREMITIES.

94. The proper dressing for every fracture of the lower extremity is the plastic apparatus.

Method of making Plastic Apparatus. In all cases the cotton should come first; next, thread holding it in place till it can be secured evenly by bandages; and on top of this the stiffening material.

Plaster of Paris must be fresh, finely ground (dental plaster), and well rubbed into slazy bandages made of quilt lining, not more than three yards long, these to be dipped in water and applied in two or more layers over limb.

Flour and Eggs. Whites to be well separated from fresh eggs, and thoroughly beaten to a froth; sifted flour to be stirred in to make a paste, which is to be rubbed into cotton bandages as they are carried over the limb, in three or four layers.

Starch. Method of application the same, except it generally requires the addition of pasteboard splints for proper stiffness.

In view of the great advances made in plastic apparatus the "starch bandage" may be considered obsolete, and only to be used when the better materials for stiffening are not to be had.

95. The plastic apparatus in fractures of the lower extremity is not only the best of dressing, but most comfortable to patient and surgeon.

96. Failure or disaster with the plastic apparatus in fractures of the lower extremity has been due generally to its improper application, or to causes which would have operated had it not been used.

97. The chief causes of failure with the plastic apparatus have been, first, the absence of cotton as a foundation, or its scant or irregular application; second, unequal pressure of retaining bandages; third, improper material; fourth, neglect to secure

the upper joint, especially a neglect of the *spica in fracture of the thigh.*

98. Under the properly-applied plastic apparatus swelling is not liable to occur.

99. In recent fracture, and above all in compound fracture, plaster of paris is to be preferred for the plastic apparatus. After union has taken place other materials may be used from consideration of lightness, etc.

100. Plaster-of-paris bandages are generally sufficiently firm for their purposes inside of thirty minutes; the flour-and-egg mixture within twelve hours, with manila paper somewhat earlier; prepared chalk and gum, oxide of zinc and glue, and starch seldom harden under forty-eight to seventy hours. The "setting" of the plaster may be hastened by the addition of alum to the water in which the rollers are placed.

101. In setting a fractured thigh it is good precaution to turn the lower fragment so that the foot may be placed a little "pigeon-toed." The natural tendency to eversion will correct this; whereas if the foot start straight it is apt to come out "spraddled."

102. Particular care should be taken to

keep the foot at right angles during the application of the plastic apparatus.

103. After the plastic apparatus has been applied it will be found that in a week or so later the limb has shrunk so that the hand may be interposed between it and the bandage. It is prudent to cut the bandage and refit it that displacement of the fragments may not occur; but it is to be remembered that in the shrinking of the muscles their contractility is also impaired and tendency to shortening is prevented.

104. The "burning heel," which is apt to come on soon after the application of any apparatus, is best remedied by shifting the position of the limb. It seldom requires a division of the plastic apparatus.

105. While it is possible for a single plaster-of-paris dressing to carry a fracture through safely, it is better for the surgeon to renew it every three weeks, until a third apparatus is applied. This will give opportunity for inspection at critical periods, will allow proper molding to the decreased size of limb, and will conserve to general cleanliness and best success.

106. The plastic apparatus is to be cut and tied with loop bandages, when from force of circumstances the surgeon can not watch it, or for swelling or shrinking of limb.

107. While it is possible for the patient to be moved immediately after the application of the plastic apparatus, and even for him to go on crutches, he is best in bed during the earlier stages of treatment.

108. It is possible, but not probable, that fractures of the thigh may heal without shortening.

109. In fractures of the thigh high up there is a tendency of the bone to bow outward. This may show itself for some time after the union of the bone. If not excessive it generally disappears under the play of the muscles.

110. If extension and counter-extension should be demanded in fractures of the lower extremity, there are but two methods worthy of consideration—one by "Buck's" weight and pulley, the other by Smith's anterior splint, or methods on the same principle.

111. Extension and counter-extension prac-

ticed by means of the long splint, perineal bands, etc. are useless. If the force is exerted sufficiently to have any influence on the muscles, the perineal band becomes unbearable. The apparatus speedily becomes disarranged, and requires constant professional supervision. Whatever use the long splint may have, is in correcting in a minor degree angular deformity.

112. It is most probable that those fractures of the thigh will heal without shortening, which occur in the young, toward the lower end of the shaft, which are dressed under an anesthetic early, by the plastic apparatus, well applied and carried above the pelvis; nevertheless fractures even of the upper third in stout adults do sometimes thus heal when dressed as above described.

113. In considering the question of shortening after fracture in the lower extremity it should be remembered that the lower limbs are not necessarily of the same length normally. Practically no shortening has occurred when the gait is not affected.

114. The measurement of a fractured limb immediately after its release from retentive

apparatus does not indicate the ultimate condition of affairs. The chances are that several months later the limb will be a fraction shorter.

115. Absolutely accurate measurement of the lower extremities is not to be made without special apparatus. Measurement from anterior spinous process of ilium to malleolus is untrustworthy. It is better to put one end of the tape at the umbilicus, and carry it in succession around either foot back to the point of departure. The difference indicated in this manner is twice the difference between the lengths of the limbs.

116. Shortening of the lower extremity under an inch can be concealed by obliquity of pelvis, or by an additional thickness or so of leather to the heel.

117. It is possible for a serviceable limb to be preserved after fracture of the femoral neck, and this is most probable when there is least separation of the fragments. It is all important therefore that in establishing diagnosis of the injury such methods as favor separation should not be employed. When the patient is past fifty, when the function of

the limb is gone, when there is deep-seated pain in the hip increased by efforts at lifting the limb, when the foot is everted, all the result of slight violence, the chances are infinitely in favor of intra-capsular fracture of the femoral neck.

118. Shortening of the limb in intra-capsular fracture of the femoral neck may be so slight at the beginning that it can not be positively detected by ordinary methods of measurement.

119. Crepitus in intra-capsular fracture of the femoral neck is difficult to elicit under any circumstances. It may be prevented by impaction of the fragments, or by unbroken fibers of the capsular ligament holding them in place. Attempts to elicit crepitus by rotation and flexion are not only, as a general thing, unnecessary, but, by separating the fragments, may destroy the best chance the patient has for a serviceable limb.

120. Granted a fracture in the neck of the thigh-bone; should doubt exist if it be intra- or extra-capsular the chances are greatly in favor of it being intra-capsular, as extra-capsular fracture has positive signs of its own.

121. Dislocation of the head of the thigh-bone, along with fracture near the hip-joint, is among the rarest of surgical injuries. It may occur, however, and, as experience has proved, escape detection even by the most skillful surgeons. This arises from the fact that the signs of dislocation in the position of the foot, rigidity of limb, etc., are destroyed by the coexisting fracture.

122. Fracture of the acetabulum with displacement of femur is to be distinguished from ordinary dislocation of the hip chiefly by the position of the foot, which may be turned by the surgeon inward or outward. Crepitus is generally wanting.

123. Lameness is a necessary consequence upon fracture of the acetabulum with displacement of femur.

124. Fracture of a condyle of the femur is exceedingly rare, and without care may be overlooked. The fragment is dragged downward by the gastrocnemius into the popliteal space, where it appears as a bony tumor, difficult to determine whether it belongs to femur or tibia. The anterior portion of limb shows no deformity. Reduc-

tion is made by forced flexion, in which position the limb must be dressed.

125. It is probable in very many instances that the patella is broken by violent contraction of the quadriceps, and that the person falls because the bone is broken, not the reverse.

126. In setting a fractured leg it is in proper axis when, sighting along the tibia, the great toe is on a line with the inner edge of the knee-cap.

127. The cause of the obstinate displacement of the fragments in fracture of bones of the leg lies chiefly in the muscles. From the fact that the shin is subcutaneous and the general action of all the muscles is from before backward, without restraining set in front; the lower fragment is tilted, and will remain so until the muscles are properly relaxed.

128. Fracture of both bones of the leg is seldom cured without leaving some trace of the injury behind.

129. Fracture of the fibula is generally noted by localized pain and loss of function. At the lower end of the bone the line

of fracture may be sometimes made out; but in any situation, owing to the close connections of the bone, crepitus is wanting.

130. If doubt exists whether an injury near the ankle is fracture or sprain, treat for fracture.

131. In fractures of tibia or fibula about ankle, stiffness of this joint for several months is generally inevitable. Use and massage form the after-treatment.

FRACTURED FEMUR:

DOES ITS LONGITUDE VARY WITH ITS LATITUDE?

A number of lectures delivered by Prof. Frank Hamilton, during the winter past, on fractures of the long bones have been published from time to time in several of our contemporaries. They must, of course, have attracted considerable attention as coming from one whose name is so intimately connected with the literature of fractures in this country. We wish we could think that the republication of his views would be productive of as general good. We use advisedly the word republication, for those who read Prof. Hamilton's last lectures must have been struck with the fact that in spite of slight symptoms he exhibited at one time of modifying the views of his earlier life under the influence of changes made in the department of fractures, he returns wholly

to his former opinions. Nay, more than that—as if to make amends for his apparent backsliding, he returns more deeply dyed than ever in the tenets of his ancient faith.

The peculiarities of Prof. Hamilton's ideas in regard to fractures may be stated to be the activity and multiplicity of the measures he deems necessary for their cure. We have neither space nor inclination to review here the details of his treatment of fractures in the several localities; but we do consider that the stand he has taken against the use of the plastic apparatus in the treatment of fractures of the femur ought not to pass unchallenged. Prof. Hamilton speaks with no uncertain sound against it. For two years he used it in alternate cases in practice, and he unqualifiedly condemns it. In his own hands, and in the hands of others, it was productive of shortened and crooked limbs, excoriations, discomfort, and heart-breaking woes innumerable; and he is happy to state that its reign in New York is fast drawing to a close. If extension was tried by the perineum, says Prof. Hamilton, there was

ulceration and slough; if the contour of the great muscle of the thigh was relied upon to give the necessary supports for this, the development of most thighs was not great enough to furnish the points; and in fractures of the femur in children, from the delicacy of their skin, the abundance of fat, the tendency to excoriation from the urine saturating the dressing, the short, fat limbs, and the restlessness of the subject, the acme of the difficulty is reached. Indeed, says Prof. Hamilton, the difficulty attending the treatment of these cases is so great that surgeons have generally dodged any separate consideration of it. "The books do not say much about it; for their authors have found it, no doubt, a very disagreeable subject, and most of them do not make any distinction between fracture of the femur in the child and in the adult." We may say, before leaving this part of the subject, that Prof. Hamilton still confines his patients with fractured femur in bed, with weight and pulley and splint and bandage for adults, and with the frame apparatus for children.

Now it sounds very strange to ears in this

latitude to hear these last words from a great surgical center like New York. Of course we would not think of putting individual experience against one who has the wards of such a great hospital at his command as has Prof. Hamilton; but surely the general experience in a city containing a hundred and forty thousand inhabitants, a long-established center of medical teaching, ought in thirteen years to have gathered something which can stand even against the greatest. It was about thirteen years ago that the plastic apparatus was first used in Louisville, to any very great extent at least, for fractures of the femur. We believe that it was principally by the example and teachings of Prof. D. W. Yandell that its use in this direction was spread hereabout. Starched apparatus had been previously used in fractures of the leg-bones, but the long splint and perineal band were still in vogue with the thigh. Prof. Yandell had, with other surgeons in the Confederate army, witnessed its good effects in fractures of the femur, and commenced this practice of dressing such injuries in Louisville immediately after his return

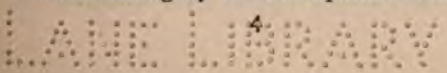
from the war. The first dressings used were the old cumbrous starched bandage, with pasteboard splints to help stiffen them; usually requiring seventy-two hours to become dry. A few years later Mr. Tuffnell's admirable paste of flour and whites of eggs was substituted, and is used to this day in a number of cases, especially after union has taken place. In 1870 Dr. Cowling introduced manila paper as a material to stiffen the apparatus. With the flour and eggs it dries in twelve hours or so, and makes one of the most beautiful of all models—smooth, tight, and durable. It is tedious to apply, however, and gave way, along with every other material, when, in 1871, the plaster-of-paris bandage came into use in Louisville. *The plaster-of-paris bandage has not only held its own since that year in this city, but has steadily grown in the confidence of the profession, and the field of its application has widened day by day.* A long splint, a weight and pulley, an inclined plane, an anterior splint, a suspensory apparatus, are curiosities in this city. They were shown at the schools for a time among the appliances for treat-

ment, exhibited later as vestiges of the past, but for five years they have slumbered undisturbed with the fathers.

The plastic apparatus is used for fractures of the foot-bones, of the leg-bones, of the patella and thigh-bone, in shaft and neck. (It constitutes, besides, the general treatment of joint-diseases, whether at ankle, knee, or hip.) It is put on as soon as it can be got on; it is disturbed as little as possible after it is on. Now with this general practice here, and with the practice of hundreds of practitioners in the South and West who have carried away from the schools of Louisville abiding faith in the method, it strikes us it is about time for us to witness or to hear from a number of those fearful results recorded by Prof. Hamilton if they follow in such numbers; and yet they do not appear. Of course perfect results are not obtained in every single instance, but positively ill results are rare, and they can either be traced to the improper application of the apparatus or to causes which would have operated, no matter what treatment might have been substituted. A stiff joint in fracture through

the joint, an excessively shortened leg in a compound and excessively oblique fracture, or a crooked limb when plain rules for the support of the upper fragment of the fractured bone have been neglected, has resulted in a very few instances; but where one man has limped after the use of the plastic apparatus a hundred have walked without doing so, and crushed and mangled limbs in numbers have not only escaped the knife, but have been almost perfectly restored. Have the limbs been shortened after thigh-fracture? Probably they have, as a rule a half inch or so; but the gait does not show it, and most careful measurement has demonstrated in some instances that even in fracture of the upper third of the femur in adults positively no shortening has occurred.

Some one may ask, how is the necessary extension kept up with the plastic apparatus? It is n't kept up at all—that idea was exploded here half a dozen years ago, when the last extending band was laid aside. The bones being put in apposition, the plastic apparatus removes the causes which produce the shortening by its incomparable fixation



somewhat, but probably most by the soothing influence of its equable warmth and gentle pressure, substituting, we imagine, persuasion for force. But the most curious thing about the use of the plastic apparatus in Louisville is, perhaps, that if it has any special field it is in the treatment of the fractured femur in children. On account of their tender skin, fat limbs, their tendency to irritation from discharges, their restlessness, etc., nothing so admirably suits them as the plaster-of-paris bandage. Absolutely free from pain after its application, causing often a doubt that fracture exists, playing with their toys in a few hours, easily handled and cleansed, out of bed in a day or so, crawling about, tumbling about, walking about on their crutches if they are old enough to walk at all, and coming out of the bandages at the end of four or five weeks with sound and straight and unshortened limbs, with scarcely a redness thereon.

How are we to explain these widely different results in New York and Louisville? Is n't it barely possible that we are not looking at the same shield at all—that the plastic

apparatus of one place is not the plastic apparatus of the other? We do not know what method Prof. Hamilton used in his application of plaster of paris. We hope he did not—and in fact do n't believe he did—put the bandage next to the skin. That were a stone coffin indeed; and, if we remember rightly, he called it so. The method used here is not the Bavarian method, with the blanket and hinge. It may be a very good method; we know nothing about it practically, but it is not desired here; for when one of our surgeons puts up the limb he puts it up to stay up, in sublime faith of its coming out all right in the end, or else that it will give evidence by the discomfort it occasions that something is going wrong which must be remedied.

If Prof. Hamilton's dressers adjusted the fractured femurs early, under an anesthetic; if they used smooth and ample layers of unbroken cotton batting next to the limb, buttock, and back; if they were ordinarily skillful bandagers, and confined the cotton equably and with moderate firmness with dry rollers; if they carried a spica over the

hip even for fracture just above the knee; and to make sure that they did carry the spica above the hip they brought it six inches above the crest of the ilium; if on the base thus constructed they placed two or three layers of plaster bandages made of slazy muslin (cheese-cloth) not longer than three yards each, into which *dry plaster* (best dental) had been thoroughly rubbed, and the bandages thus prepared were dipped into water and wetted through before application; if these bandages were smoothly applied, and especially thoroughly applied over the spica, which can be done without encircling the abdomen; if they removed any redundancy about the perineum so that the bandage might not touch it, and looked well to the cotton in that locality, covering it with oil-silk if they cared to do so; if in the application of the plaster bandages the foot was kept rigidly at a right angle, and the knee straight or slightly flexed; if the case was looked to twice during the first twenty-four hours, and half a dozen times during the subsequent six weeks; *then*, if affairs turned as badly as Prof. Hamilton has

said, we must believe that the New York thigh and the Kentucky thigh have been evolved from different progenitors.

The fact is, we don't know what to think about the matter. We can hardly believe that Prof. Hamilton doesn't know how to apply the dressing, and it is hard to think that bone nature changes with latitudes, however strong our faith in the blue-grass beef and the Bourbon. We are bothered, too, by conflicting statements in regard to the matter. Prof. Hamilton says his colleagues have pretty well abandoned the plastic dressings. He may think so, but one must go away from home to learn the news. Does not Prof. Van Buren still believe in it? is it possible that Dr. Sayre has weakened in his faith concerning it? and is its stout defender, Dr. St. John, ready to retract what he has said about it? We imagine Prof. Hamilton has been misinformed. Philadelphia would of course rather give up her machine-shops than the bewildering mechanism of her fracture wards, but New York is more progressive.

It would be foolish, of course, to declare

that one method in the treatment of fractures gets all the good results, and other methods get all the bad ones. The fact is that under the best directed treatment by any method fracture cases will sometimes result badly; and he who is swift to condemn a brother surgeon for this, lacks as much in intelligence as he does in charity. The surgeon is most apt to get good results by the application of methods in which he has most facility. Early impressions are difficult to remove and skill in new methods hard to acquire; hence it is that we deem it important that the plastic method of dressing fractures of the lower extremities should be thoroughly put before every student at the outset of his career.

We can not but think that the plastic dressings are among the greatest of the blessings of modern surgery, both to patient and to surgeon. They fill the whole measure of the law. They heal as *quickly* as the nature of the case will admit, as *safely* as by any method yet devised, and *pleasantly* to a degree beyond the power of any other plan—past, present, and we may

safely say future—to achieve. And if our words in their defense have been many, they are not wasted if they do but inspire one wavering brother to test their merits.—*Editorial in Louisville Medical News, March* 16, 1878.

CRITICISMS.

Professor Louis Bauer's Criticism.

While emphatically indorsing *every one* of your propositions, I beg to suggest a few additions in behalf of completeness.

In fundamental symptoms of fracture you might also have included deformity and undue mobility, which gives rise to that "physiognomy about fractures" to which you refer in your second Aphorism.

To Aphorism 11 there might be profitably added, Except in fractures of the surgical neck of the scapula, which exhibit all the attributes of dislocation of the humerus into the axillary cavity.

I am fully aware that some surgeons deny the occurrence of that fracture; but this is an error. It is very rare, I admit, and some surgeons may not meet it in a lifetime. That proves, however, nothing to the contrary. I myself have observed three cases, and a fourth one has just come under my notice in its ulterior results.

One of our prominent city officials sustained a fall at the great fire of the Southern Hotel last year. His family attendant recognized a disloca-

tion of the humerus in the axilla, but wisely sent for a surgeon. Being absent, his *alter ego* came in his stead. The diagnosis was affirmed and the arm reduced. The surgeon *in propria persona* saw the patient subsequently several times and pronounced the case all right.

After the patient had held the arm in a sling for some weeks and suffered considerable pain, he was permitted to dispense with the sling and to use occasionally his arm. Every attempt to bring it into play caused him pain so intense that he had to give it up. The pain followed the course of the brachial plexus, and was accompanied by numbness.

This condition had lasted several months, when the patient submitted his case to my inspection. When completely undressed, I saw at once that the symmetry of his form had been lost, that the distance of the affected shoulder from the spine had been materially reduced, and that the convexity of the deltoid was flattened. The articulation was free and the motion impeded only by pain. This position may be found after fractures of the clavicle with overlapping of the fragments; but there was no trace of such injury. There is but one solution of the enigma, and that is fracture of the surgical neck of the scapula with displacement. Unfortunately the patient is rather corpulent, and therefore it is out of the question to disclose the exact place of union. But this

much is clear, that a simple dislocation of the humerus promptly reduced can not lead to such consequences. There may be moderate atrophy of the muscles of the shoulder-joint; but neuralgic pain, numbness of the hand, nor material alteration of the symmetry are sequelæ of dislocation.

Aphorism No. 19 should be more positive.

Aphorism 29. *No 'swelling at all* as emanating from the fracture.

Aphorism 38. You might have included harness-leather as an excellent material for splints. I have used it exclusively for at least the last ten years, and it has always given satisfaction. Its advantages are manifold: (1) It molds itself to the form of the member when softened by warm water; (2) it is permeable, hence not heating; (3) the splints may be used again by the same process; (4) it is a material which the surgeon can find every where at moderate expense; (5) it dries quickly, and is then as hard as needed. I generally keep half a hide on hand, take it to the patient's house, and cut the pieces out according to the previous measurements. The stoutest part of the hide I take for adults and the lower extremities, and the lesser for children and the superior extremities.

Aphorism 39. I exclusively use the best flannel for bandages—never shifting and most elastic. The price may be an inconvenience, but most patients are able to defray the expense in their own

behalf; and if I had to bear it I should consider myself compensated by saving time.

I fully indorse all you have said in Aphorism 45. The muscular theory, which underlies Buck's treatment, is untenable. An article on this subject will be published by me in one of the next numbers of the St. Louis Clinical Record.

Emphatically of your opinion as expressed in Aphorism 47.

According to the early commendation of Dr. Gehring—formerly of Denver, now of St. Louis—the immobilization of the thorax is the best auxiliary in almost all inflammatory affections of the respiratory organs, more especially in pleuritis. Might not a plaster jacket be preferable to the jack-towel in fractures of the ribs?

In the treatment of fractures at the lower extremities, especially of thigh, I prefer the double inclined plane to the straight position, as less irksome; but the chief reason of this plan is that the body is prevented from pushing the upper fragment over the lower, which, in my opinion, is the principal cause of the shortening so frequent in fractures of the thigh.

This is all that sharp scrutiny of your Aphorisms could suggest, and this surely is of little weight when compared with the profound views you have advanced.

LOUIS BAUER.

ST. LOUIS.

FROM PROFESSOR PACKARD.

I can indorse the Aphorisms almost without qualification. One I would like to add, a slight adaptation of Jackson's great maxim, "Eternal vigilance is the price of success in treating fractures."

Aphorism 7. When swelling has already taken place very largely before the surgeon sees a severe injury of the hip, shoulder, or elbow, I think, and could quote a strong array of cases in support of the statement, that the diagnosis between fracture and luxation is not always easy.

Aphorism 47. While I am willing to admit that *dis*comfort is evidence that fractures are *not* properly dressed, I am sorry to say that I have seen very bad results in cases which had been comfortable all the way through, in spite of angular deformity, shortening, and rotary displacement of fragments.

Aphorism 71. Without denying that the use of compresses is often injudicious and unsurgical, I shall be very loath to be debarred from employing them in many instances, temporarily at least.

Aphorism 72. Do not think me presumptuous in saying that there *ought not to be* any deformity remaining after Colles' fracture, seen early and properly treated.

Aphorism 88. Let me suggest that one great reason of the deformity in fracture at the middle

of the clavicle is the drawing forward of the scapula by the serratus magnus, which must be overcome.

Aphorism 95, *et seq.* I should not be willing to risk treating fracture of the thigh without weight-extension for the first three weeks at least, except in very young children, and believe the soluble glass or silicate of soda to be the best plastic material.

Aphorism 115. Pardon my saying that it seems to me that in skillful hands the measurement from the anterior iliac spine to the malleolus would be as the method you propose, and that in unskillful hands either would be likely to give erroneous results.

Aphorism 111 I think will meet with unquestioning approval from all surgeons who are not hopelessly behind the times.

About New York surgeons I do not, of course, know as much as about those of my own city, but I think their tendency, like ours, is to do away with complicated apparatus, and to aim at accomplishing the great object of retaining the fragments in their normal relation by the simplest and most direct means. I therefore do not exactly understand the statement (No. 116, p. 132), that "Philadelphia would, of course, rather give up her machine-shops than the bewildering mechanism of her fracture wards."

In my own wards at the Episcopal Hospital

there is certainly no bewildering mechanism, and I did not see any thing of the kind during the terms of service of my colleagues, or in our other hospitals. Possibly the person on whom such an impression was made was somewhat easily bewildered, and perhaps he had never seen so many cases together before.

Pardon the freedom of these hasty criticisms, and permit me again to express my sense of the value of your Aphorisms.

With much respect, very truly yours,

JOHN H. PACKARD.

PHILADELPHIA.

PROFESSOR VAN BUREN ON THE APHORISMS.

It is rare in my reading to find so little open to criticism where so much is put forth in the form of positive opinion tersely expressed.

There's one point in which I can not go with you. I am not willing to agree that in the treatment of fracture compresses are "unsurgical." A saddle-shaped compress over an unruly upper fragment of a tibia, and the double compress in silver-fork fracture, to prevent recurrence of deformity after reduction, have served me well in too many cases to pass without acknowledgment. I think also that the treatment of this fracture by short splints not reaching beyond the radio-carpal joint is

a method of which the merit will be permanently recognized. I have used it almost exclusively for twenty-five years, having adopted it through a hint from a Danish surgeon—Fenger—about the time I first entered on duty as a surgeon of the New York Hospital, and have rarely failed in getting an excellent result. Owing to the impaction that usually masks crepitus in this fracture, it is too often mistaken for luxation, otherwise it would undoubtedly be recognized as the most frequent of all fractures, occurring as it does from the involuntary thrusting forth of the hand to save the face in falling forward. I have refractured several limbs rendered useless by this mistake, and always with advantage. The impaction should always be broken up, and the fragments accurately molded, and this usually under ether; then a thin compress of blanket on the dorsal and palmar aspects, to replace the thumb and finger, which retain the fragments reduced; then over these short splints with blanket pads, the whole retained by three strips of adhesive plaster two inches in width; no bandage.

The rule of Boyer and Pott, to immobilize contiguous joints in applying apparatus for fracture, although a good one, has its exceptions—it sometimes spoils a joint unnecessarily in the interest of a broken bone, by keeping the joint too quiet. I believe in the elder Warren's recommendation—in fractures near joints always take off splints a week

sooner. I have done this in treating silver-fork fractures, with a result in earlier use of the member, for which the laborer or mechanic is always grateful.

Your "Aphorisms" recall a remark dropped by Erichsen when he visited us a year or two since: "You Americans enjoy a great advantage in not being tied down by traditions and respect for old authorities; you can get rid of ancient errors faster than we can."

Pardon my much speaking, and believe me, dear Dr. Cowling, yours very truly,

WM. H. VAN BUREN.

NEW YORK.

DR. W. O. ROBERTS'S CRITICISM.

I read your Aphorisms with considerable interest. Their practical character must make them popular with the profession. I was glad to see your emphatic indorsement of the plastic apparatus. Its comfort to patient and surgeon alike has been proved so thoroughly that it seems strange it should need recommendation at this day.

The importance of Aphorism 64, concerning the position of the foot at a right angle, I have just had opportunity of testing. A patient was admitted to the hospital with anchylosis of the ankle-joint (after fracture of the tibia), and with his foot pointing in such an angle that his heel could not

touch the ground. The rectangular position would have obviated some of his difficulty, and probably all. At any rate I do not remember to have seen a case of serious anchylosis at the ankle where the position of the foot had been properly attended to where the tendo-Achilles was not at fault. It is a point frequently overlooked, as in the recumbent posture the foot naturally bends forward, and it is only when the patient rises, and, in attempting to walk upon his crutches, strikes his toes upon the floor, that the mischief is seen. Erichsen refers to the fact, you remember, that the continued pressure upon the ligaments, by the extension of the foot may result in more or less permanently deranging them. The rectangular position, after a few minutes, is well borne.

In regard to deferring cutting the trap in compound fractures, I fully agree with you, provided oakum has been used over and to some distance above and below the wound. This easily becomes saturated and provides for drainage. In four cases of compound fracture which I treated during the past year, three were dressed with oakum and one with cotton. The trap was deferred in all. In the cases where the oakum was used the results were entirely favorable. The oakum was saturated throughout, but the wound was clean and closed readily. In the case where the cotton was used the cotton came out clean, not being soiled more than a few inches around the wound, but an abscess

was formed and pointed on the opposite side of the limb.

In fracture of the lower third of the leg I have not found it necessary to keep the knee confined longer than three weeks.

Very truly yours,

W. O. ROBERTS.

LOUISVILLE.

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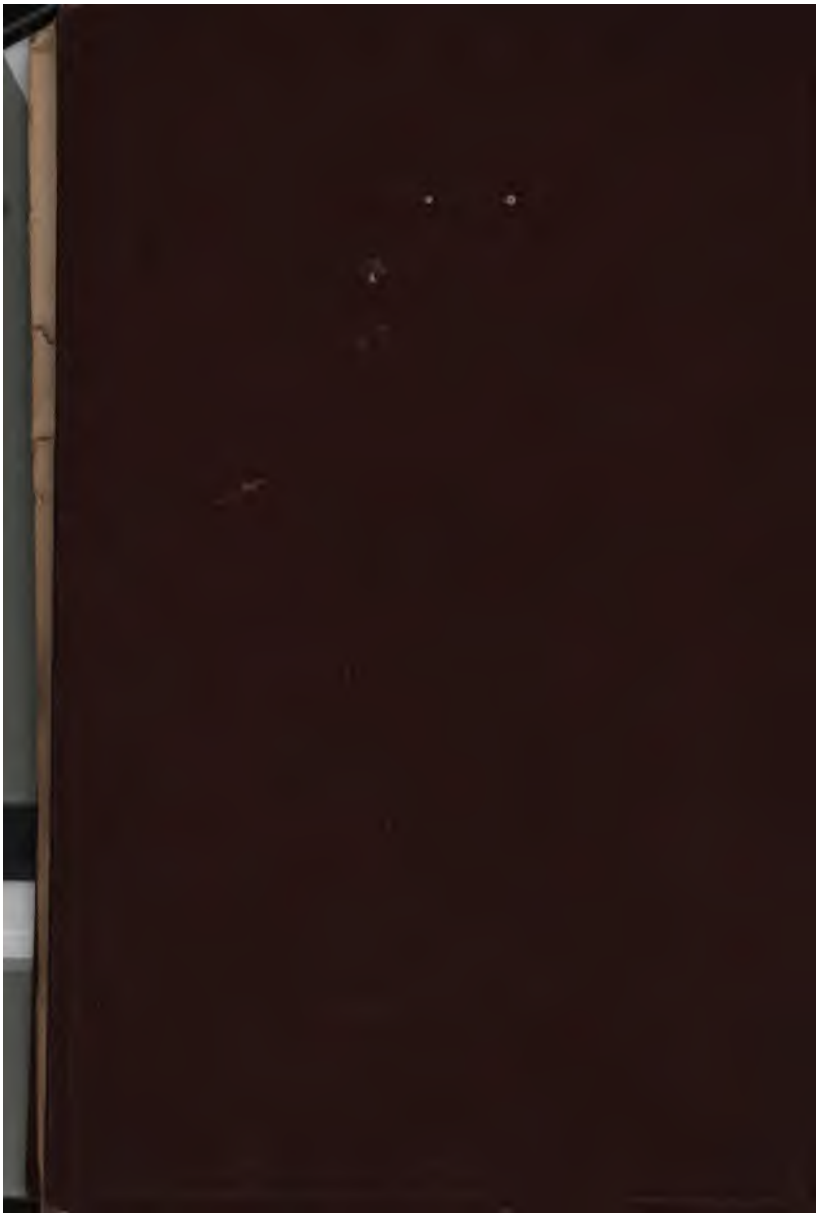
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